



GEORGETOWN UNIVERSITY

SCIENCE IN THE NEWS

SUMMER 2021

Instructor: Dr. Michelle Bertke (michelle.bertke@georgetown.edu)

Office: The world is my office!

Office Hours: By appointment

Class Meeting Times: MTWR 8:30am-10:30am

Course Objectives:

1. Identify the difference between primary and secondary resources.
2. Develop skills for researching and reading complex scientific research articles.
3. Evaluate the accuracy of scientific facts as they are presented in news outlets and social media.
4. Effectively communicate science topics, specifically involving chemical and biological principles, to a diverse audience.
5. Use primary and secondary literature sources to verify or refute science information presented in media.

Quick Glance Tentative Lecture Schedule:

Week	Dates	Topic
1	6/7- 6/12	Introduction to Biology and Chemistry Science Literature
2	6/13-6/19	Coronavirus and Vaccines
3	6/20-6/26	Genetic Engineering
4	6/27-7/3	Ocean acidification and climate change
5	7/4-7/9	Open Topics

This lecture and activity schedule is subject to change based on class interest.

Updated dates and topics will always be posted on Canvas and announced in class.

Topics Lecture Schedule:

Week	Dates	Topic	Material
1	6/7- 6/12	Introduction Science Literature	- Chemistry and biology basics: atoms, molecules, bonding, introduction to chemical reactions. - How to read primary research articles. - Difference between primary and secondary sources.

			- Introduction to analyzing science content presented in news articles
2	6/13-6/19	Coronavirus and Vaccines	- Introduction to human anatomy, cells, and the immune system - Virus vs Bacteria - Molecular interactions in the human body - Chemical components of a vaccine - Inorganic vs organic molecules
3	6/20-6/26	DNA Cloning/GMO	- Advanced biological molecules - Central dogma of biology (DNA-RNA-proteins) - Intermolecular interactions (Hydrogen bonding) - Stem cells - DNA manipulation to control nature
4	6/27-7/3	Ocean acidification Climate change	- Acids and Bases - Gasses, pressures, and diffusion - Chemical reactions - Natural versus human made climate change - Environmental impact - Ecosystems
5	7/4-7/9	Open Topics	-

Grade:

Your grade will be made of several different components:

- 25% - Writing assignments
- 20% - Presentations
- 20% - Homework and in class activities
- 10% - Discussion participation (in class and out of class)
- 15% - Quizzes
- 10% - Final Reflection

The following grading cutoffs will be used:

100-94: A	79-77: C+
93-90: A-	76-74: C
89-87: B+,	73-70: C-
86-84: B	69-60: D
83-80: B-	<60: F

This will be considered the starting point for grade cutoffs. They may be adjusted up or down a point (depending on the outcome of the semester), but this will give you an idea.

More information about assignments:

- Quizzes – there will be quizzes that will ask questions about the chemistry and biology content behind each of the topics that we cover in class. These quizzes will accompany the pre-recorded lectures and material posted on Canvas. You will be expected to complete read/view the content and complete the quiz prior to coming to class.
- The homework and in class activities will be a mixture of short writing assignments, online assignments, in class or out of class group activities. These will involve answering question based on the in-class discussion about the material.
- The writing assignments will be short papers and projects based on the topics we are discussing in class.
- The presentations will be individual or group projects that require out of class research and video recording that will be presented to the rest of the class.

Course Overview:

This course has been designed to provide non-science majors with the skills to critically read and understand science (specifically chemistry and biology) as it is presented in the news. Everyone can benefit from being able to read a news article and evaluate the science presented as reliable or not. Students are not expected to have strong background in chemistry and introductory material necessary for the lecture will be presented. The course material will consist of news articles as well as scientific papers in addition to videos and writings posted on Canvas.

There are two main goals of this course: 1) learn background chemistry and biology information and 2) understand the importance of accurate science reporting on society and its leaders. In each unit of this course we will cover the necessary science facts and information needed to understand each topic. We will also use news and research articles to explore how that science impacts the interactions of humans and the world.

Course Material

Information, including weekly readings and lecture material will be posted on Canvas. Check regularly to make sure that you are prepared in advance for the course. The course will consist of asynchronous and synchronous components.

Asynchronous – Some lectures will be pre-recorded and will be posted on Canvas. These lectures will focus on the background material you need to understand the topics that will be discussed in class the following week. You might find that portions of this material are review, specifically if you have had high level biology or chemistry courses. Quizzes will cover material included in these lectures.

Synchronous –These will be less lecture and more discussion in small groups, Zoom breakout rooms, group assignments, and/or shared Google documents. You are

expected to be present in these class sessions. If this is an issue, please email me and let me know. Part of your grade will come from in class assignments and discussions.

Class Expectations:

1. There will be synchronous and asynchronous components of this course. If you have an issue with the in-person component (internet connectivity, time zone concerns, or other), please reach out to me.
2. When you are present in live lecture sessions, be prepared to work. It is good to have your camera on as this will increase your and other's engagement in the class. I understand if this is not always possible. If you have an issue with this, please reach out to me to discuss it. Rudeness or disruptive behavior will not be tolerated. There will be in class assignments that will build on the material covered out of class. Therefore, if you are not coming to class ready to actively engage, do not come to class.
3. If for some reason you need to miss a class (due to illness-mental or physical, family emergency, etc.), please email me (michelle.bertke@georgetown.edu) as soon as you can. There are many points built into this course and missing one assignment will not drastically affect your grade. It is important to take care of yourself if you feel the need to miss class.
4. Come prepared to class each day. This will involve reviewing material ahead of time and answering discussion questions. Several course sessions will involve in-class work or discussion. Everyone will benefit more from this if each student comes to class prepared to work with the material.
5. Turn in all work at the required time. Late work will be subjected to a 5%-point deduction per day it is late.
6. At the beginning of the semester, you will sort yourself into groups for in class discussions and presentations. Your grade for this work will be part group effort and part individual. Each person is expected to participate equally. The goal of these groups is to build community and provide study groups for this class and others. These groups are not set-in stone and can be adjusted if needed.
7. Disrespect or rudeness will not be tolerated in this class, specifically during discussions. As a student of Georgetown, you are held to a high standard of education of the whole person, *cura personalis*. Part of that in this class is learning how to engage in scholarly debates. Every person is expected to act in a professional manner.

Discussion participation:

A portion of your grade (10%) is determined by participation in [discussion forums](#). There will be multiple opportunities to earn points for discussion participation. You will not be graded on correctness for these questions. Instead, you will be graded on the quality of your answer. If you must miss class, do not worry. You will have many more opportunities to make up the points. There won't be an opportunity for makeup

of missed points (unless they are university approved absences). You are expected to complete the assigned material in time for the next class period.

Below are some guidelines for how to conduct yourself in an online discussion and what is expected. More detailed information can be [found in this document](#). 

- Grading for discussion posts will generally be on a scale of 0-3. Points will be given for posting and responding to other's posts. These points will all go toward the participation grade for the semester.
- You will not be expected to comment on every entry, but you should demonstrate that you are active in the discussions.
- Discussion questions will have a deadline for posting and commenting. Discussions will often happen in your small group Canvas page. This allows for a more meaningful and manageable discussion.
- When answering a discussion question, ask yourself 'Am I adding value to this discussion thread?' If the answer is No, rethink your response.
- Although it is perfectly fine, even recommended, to challenge your classmates' posts and defend your opinions, you are expected to do so in respectful and polite manner.
- For an example of what I am expecting for discussion posts, check out this document.

Collaborative work and presentations:

At the beginning of the semester, you will organize yourself into groups for discussion and presentations throughout the semester. Several class sessions will involve discussion and collaboration on activities. Each person is expected to contribute to this work. Grading on these activities will sometimes be group effort based and sometimes be individually based. These teams will remain the same throughout the semester and should serve as an additional resource for clarification of material and study assistance. The groups can be rearranged if an issue occurs. I encourage you to meet outside of class with your team to review for quizzes, discussions, and to work on homework and worksheets. A portion of your group presentation grades will be based on peer review from members of your team.

There are activities that are turned in as a group and some that are turned in individually. Please make note of what type of assignment it is when you are turning it in. When you work on individual assignments, you are expected to submit original answers. When you collaborate on assignments you should be discussing the concepts or information with your classmates but formulating answers to questions that are in your own words. This class encourages scientific collaboration, but it should be clear that each person has done the necessary work. **Academic dishonesty will not be tolerated!** If you ever have questions about this, ask for clarification!

Office Hours:

Office hours will be by appointment. If you need a personalized meeting, email me with a time and we can set up an individual Zoom meeting.

For general questions, I will also start [discussion boards](#) for everyone to post on. I will check in with these periodically to comment on unresolved questions or clear up misconceptions.

Helpful material for effective online learning

Off campus access to library materials (including journals). If you are having trouble viewing primary literature articles, visit the library remote access page <https://www.library.georgetown.edu/off-campus-access>.

[Student checklist for remote learning](#).  This is a good list for how to get started and some points that you need to consider before you can fully involve yourself in this your education.

[Being a successful student online](#).  Georgetown has provided some ideas for how to best handle this environment.

[Student's guide to Zoom](#).  Tutorial document for how to navigate zoom.

[Tips for virtual groups](#).  Check out this infographic for details about being a productive member of a virtual group.

[Georgetown has set up a page](#) for working through this instructional continuity.

Honor Code:

As a student at Georgetown University, you are expected to uphold the university honor pledge (www.georgetown.edu/honor). There will be times when you can work together in pairs or groups, but everyone is expected to understand the material and turn in their own work.

Students agree that by taking this course all required papers may be subject to submission for a Textual Similarity Review to Turnitin.com for the detection of plagiarism. All submitted papers will be added as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers in the future. Use of the Turnitin.com service is subject to the terms of use agreement posted on the Turnitin.com site.

Harassment/Sexual misconduct:

Under no circumstances will harassment or sexual misconduct be tolerated in the classroom. Everyone will be treated with respect and treat others with respect. I am committed to providing support to those who are victims of harassment or sexual assault. However, as a faculty, I am required to report any incidences of harassment or sexual assault to the Title IX coordinator. If you require a confidential resource,

Georgetown offers many professionals to contact. Information about reporting or discussing harassment and sexual assault can be found at sexualassault.georgetown.edu.

Accommodations:

When it comes to issues around health and wellness, you may face challenges in your time at Georgetown. It's important to be aware of the resources available to support you. If you have a disability that may affect your academic work or well-being and for which accommodations may be necessary, come to me within the first two weeks of the course (or, in other circumstances, as soon as possible after accommodation becomes necessary) so that I can arrange for your needs to be met in this regard. You will also need to contact the Academic Resource Center (<http://academicsupport.georgetown.edu>), located in Leavey Center.

Student Support:

There are many resources on campus available to students for support throughout their time at Georgetown, covering physical and mental well-being. You can find a comprehensive brochure listing these resources at <https://studenthealth.georgetown.edu/self-care>.

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